

## **5.6 AIR QUALITY**

### **5.6.1 Alternative 1 – No Action**

There would be no additional emissions due to the FRP under Alternative 1 - No Action. Air quality would be bounded by the results presented in Chapter 4, Affected Environment, assuming that the existing emission control systems were efficiently maintained.

### **5.6.2 Alternative 2 – Remodel**

#### **Operation**

Implementation of Alternative 2 would not result in increases to air emissions as a result of R&D operations. It is possible that remodeling and the deactivation of buildings could result in minor emission reductions due to improved HVAC systems.

#### **Remodeling**

Existing air quality at ORR/ORNL is in attainment with National Ambient Air Quality Standards (NAAQS) for all the criteria pollutants. It is anticipated that the additional criteria pollutants generated during operations of heavy equipment as a result of remodeling activities would be negligible and is not expected to cause NAAQS violations.

The remodeling activities at the site would not produce a significant amount of fugitive dust. Furthermore, it is anticipated that the remodeling activities would not produce any additional radiological emissions. It is anticipated that the best construction management practices would be used for remodeling at the site to mitigate any airborne releases.

### **5.6.3 Alternative 3 – Brownfield**

#### **Operation**

There would be no new emissions as a result of R&D operations under Alternative 3 because no new processes that would generate air emissions are anticipated under this alternative. No regional changes in emissions generated by ORNL R&D activities are anticipated as a result of implementation of any of the alternatives. However, localized shifts in emission points within the reservation will occur as research activities move from Y-12 to ORNL under Alternative 3. Emissions in Bethel Valley would not increase noticeably as a result of relocation of ORNL operations from Y-12 to ORNL because they would be negligible compared to the total emissions reported for the ORNL site. Air quality in Bethel and Melton Valleys is expected to be the same as described under Alternative 1 - No Action discussed above.

#### **Remodeling and FRP Construction**

Existing air quality at ORR/ORNL is in attainment with NAAQS for all the criteria pollutants. Additional criteria pollutants generated as a result of site development activities and construction would be small and are not expected to cause NAAQS violations. Because ORR/ORNL is currently in an attainment area for all the criteria pollutants a conformity determination is not needed (See Section 4.6).

Remodeling and FRP construction activities would produce fugitive dust but this would be minimized by best management practices. Common measures may include application of water for dust suppression and measures to control fugitive emissions from other activities. It is expected that these temporary activities would generate much less dust than normal farming practices in the surrounding Oak Ridge area. Furthermore, it is anticipated that the remodeling and construction activities would not produce any additional radiological emissions.

VOCs would be generated by vehicles and heavy equipment due to the transportation of materials from the existing Y-12 buildings to the new ORNL building and remodel/construction activities. The emissions of VOCs from the vehicles are expected to be minimal and are discussed further in Section 5.10, Transportation.

## **Deactivation and Demolition**

Materials present in the old buildings at Y-12 and ORNL would be transported to the new building at ORNL as a part of the FRP. In accordance with Department of Transportation (DOT) requirements and additional ES&H requirements, it is anticipated that there would be no emissions of hazardous materials as a result of relocating materials from old buildings at Y-12 and ORNL to new buildings at ORNL. Air emissions that might result from transportation are discussed in Section 5.10.

Buildings 9201-2, 9201-3, 9204-1, 9204-3, and 9201-1 at Y-12 and 2000, 2001, and 3550 at the ORNL have areas with fixed and/or legacy contamination in the ductwork and/or structures. In addition, Building 9204-3 at Y-12 has other contaminated areas. Deactivated buildings that are contaminated would be subject to remediation under CERCLA. No emissions from these buildings are anticipated as a result of being deactivated.

Demolition of buildings would require similar dust suppression measures as for construction. If hazardous materials such as asbestos were present, appropriate best management practices would be required to mitigate the hazards.

### **5.6.4 Alternative 4 – Greenfield**

The effects of Alternative 4 with respect to air emissions would be similar to the effects from Alternative 3 discussed above in all but one aspect. Site preparation of the uncleared Greenfield would first involve clearing and removing the existing vegetation. Vegetation could be disposed of on-site if it were burned. Open burning is regulated in Tennessee, and a permit to burn would be obtained prior to any burn. The cut and fill activities to grade the site for building footprints and roadway and parking areas over approximately 18 ha (45 acres) would generate more dust than would be anticipated for the other alternatives. The generation of dust would be temporary; dust suppression measures would be utilized and care would be taken to meet regulatory requirements.